



Decision Report

Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W6435/2020/1
Applicant	Newcrest Operations Limited
ACN	009 221 505
File Number	DER2020/000368
Premises	Havieron Project On M45/1287 As defined by the coordinates in Schedule 1 of the works approval
Date of Report	17/11/2020
Decision	Works approval granted

Steve Checker

**MANAGER WASTE INDUSTRIES
REGULATORY SERVICES**

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This Decision Report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the Premises. As a result of this assessment, Works Approval W6435/2020/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Decision Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

2.2 Application summary and overview of Premises

On 12 August 2020, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction works relating to the construction of a WWTP and irrigation field at the Premises. The Premises is approximately 252.8 km east of Nullagine, WA.

The Premises relates to the category and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in Works Approval W6435/2020/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guidance Statement: Risk Assessments* (DER 2017) are outlined in Works Approval W6435/2020/1.

On 30 October 2020, the applicant requested the disposal of reverse osmosis (RO) discharge water to the irrigation field be included in the works approval assessment. Impacts to irrigated native vegetation from the estimated discharge salinity of 2,500mg/L TDS was unclear and further advice would need to be sought. As a result of this further advice required, applicant has withdrawn this aspect of the application and the discharge of RO to the irrigation field has not been assessed in the scope of this works approval. The applicant was advised to apply for a works approval amendment should they wish to include RO discharge to the irrigation field.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guidance Statement: Risk Assessments* (DER 2017).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Decision Report are detailed in Table 1 below. Table 1 also details the proposed control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Earthworks and vehicle movement	Air/windborne pathway	<ul style="list-style-type: none"> Dust suppression (water cart) during construction activities Speed limits for vehicles will be implemented
Contaminated storm water and groundwater	Hydrocarbon spills from heavy machinery	Overland flow and seepage	<ul style="list-style-type: none"> Heavy machinery inspections will be implemented Spill kits Incident reporting
Windblown waste	Construction waste	Air/windborne	<ul style="list-style-type: none"> Construction waste will be sorted appropriately Waste containers and lids will be secured Construction waste to be disposed at Telfer mine site
Operation			
Contaminated ground water	Pipeline failure	Seepage	<ul style="list-style-type: none"> Daily pipeline inspections Windrows will be implemented to prevent vehicle interactions with pipelines Signage indicating pipelines will be implemented.
Contaminated storm water	Treated Effluent quality exceedance	Overland flow	<ul style="list-style-type: none"> If threshold limit exceedance is observed, discharge to the environment will be ceased WWTP will be serviced as required Treated effluent monitoring and testing The WWTP is equipped with alarm systems including: <ul style="list-style-type: none"> Low chemical level alarms Low chlorine level in final effluent Chlorine system fault alarm Pump and process alarms Low final Low raw water alarms
Contaminated ground water and storm water	Containment infrastructure failure	Seepage and overland flow	<ul style="list-style-type: none"> All containment infrastructure will be built in accordance with relevant Australian Standards
Contaminated ground water	Operation of irrigation field	Seepage	<ul style="list-style-type: none"> If threshold limit exceedance is observed, discharge to the environment will be ceased
Feral animals and pests	Ponding of water in irrigation field	Attraction of feral animals and pests	<ul style="list-style-type: none"> Irrigation area inspections Fencing Irrigators will be designed to maximise evaporation and to minimise water ponding

3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), the Delegated Officer has excluded employees, visitors and contractors of the applicant's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 and Figure 1 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guidance Statement: Environmental Siting* (DER 2016)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Telfer Mine Site (owned by Newcrest)	~45 km west of the Premises
Punmu (Lake Dora) Remote Community	~55.5 km south-east of the Premises
Environmental receptors	Distance from prescribed activity
Karlamilyi National Park (R34607) <ul style="list-style-type: none"> Conservation and Land Management Act 1984 (CALM Act) – Section 5(1)(c). 	~26 km south-east of the Premises
Lake Dora (Rudall River) system Conservation status Important Wetland	~30 km south-east of the Premises
Underlying groundwater	~ 10-12 mbgl; Salinity: 1000-3000 mg/L pH: 8.0 Within the <i>RIWI Act 1914</i> Canning – Kimberley Groundwater Area
Minor surface water lines	~ 9.5 km west of the Premises; ~ 8.5 km west of the Premises; ~ 7km west south-west of the Premises; and ~7.6 km south of the Premises.
Threatened fauna <ul style="list-style-type: none"> <i>Macrotis lagotis</i> (Bilby) – Vulnerable; <i>Dasycercus</i> sp. (Mulgara) –Near Threatened; <i>Liopholis kintorei</i> (Great desert skink) – Vulnerable; 	~11.2 km south of the Premises; ~ 13.6 km south of the Premises; ~ 16.5 km south-east of the Premises

Figure 1: Distance to sensitive receptors - human

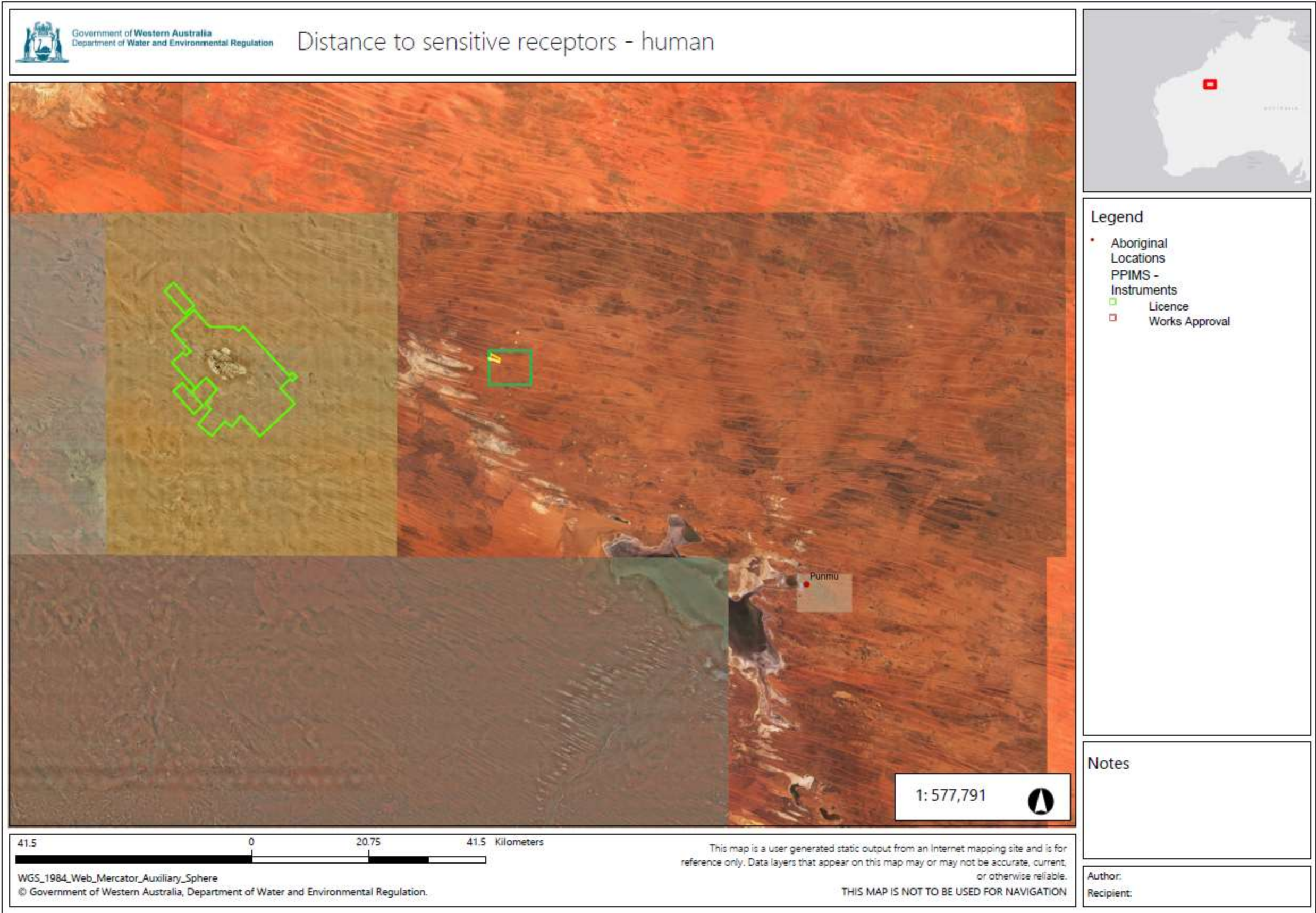
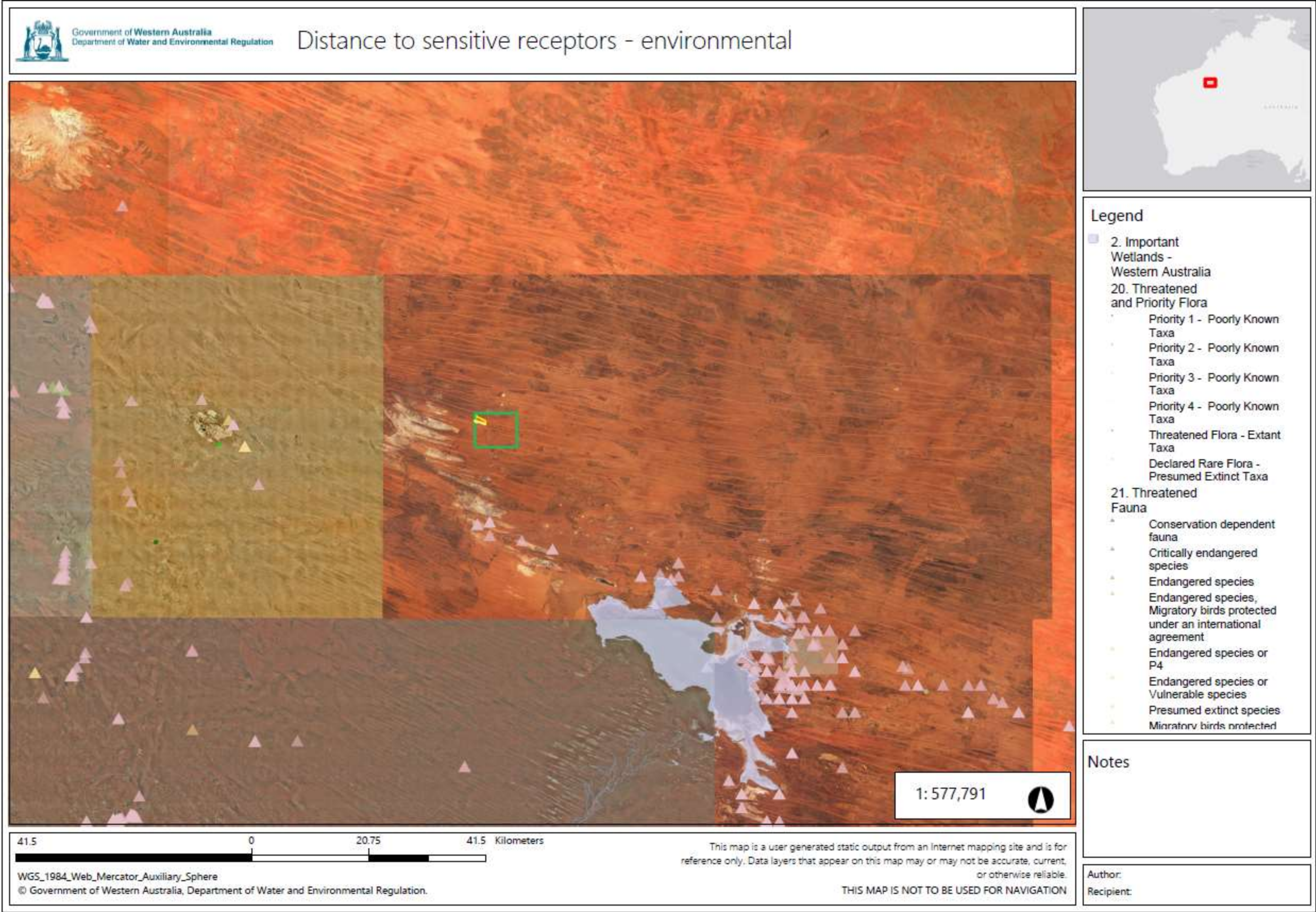


Figure 2: Distance to sensitive receptors – environmental



3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Works Approval W6435/2020/1 that accompanies this Decision Report authorises construction and time-limited operations. The conditions in the issued Works Approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the Premises i.e. operation of the WWTP and irrigation field. A risk assessment for the operational phase has been included in this Decision Report, however licence conditions will not be finalised until the department assesses the licence application.

Table 3: Risk assessment of potential emissions and discharges from the Premises during construction, commissioning and operation

Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Construction								
Earthworks from the: <ul style="list-style-type: none">• placement of the prefabricated poly sewage pump station and associated infrastructure;• construction of the Sequence Batch Reactor (SBR) and other associated WWTP infrastructure; the irrigation field; and Inlet works	Dust	Air/windborne pathway causing impacts to health and amenity	No receptors within 10 km of the Premises	Refer to Section 3.1	N/A	Y	N/A	N/A
	Noise							
Vehicle movement	Dust							
	Noise							
Heavy machinery - Hydrocarbon spills	Contaminated ground water	Seepage to groundwater contaminating groundwater and affecting the health of surrounding receptors	RIWI Act 1914 Canning-Kimberley Groundwater Area Groundwater ~ 10–12 mbgl		C = Minor L = Rare Low Risk			
		Contaminated storm water	Overland flow impacting surrounding receptors					

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Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
			Premises Nearest surface water line ~8.5 km west of the Premises					
Construction waste	Windblown waste	Air/windborne pathway causing impacts to amenity and affecting surrounding fauna	Surrounding fauna. Nearest recorded sighting ~ 11 km south of the Premises		C = Slight L = Possible Low Risk			
Commissioning								
Commissioning of WWTP	Groundwater contamination	Seepage to groundwater contaminating groundwater and affecting the health of surrounding receptors	RIWI Act 1914 Canning-Kimberley Groundwater Area Groundwater ~ 10–12 mbgl	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	Conditions 4,5,6, and 7	Commissioning may only occur once compliance with condition 1 and 2 have been met. Continuous monitoring of discharge quality must occur and be reported to the CEO. No conditions have been included for ambient groundwater monitoring during commissioning/ time limited operations given the low risk rating and distance to
	Contaminated storm water	Overland flow impacting surrounding receptors	Surrounding fauna. Nearest recorded sighting ~ 11 km south of the Premises Nearest minor					

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Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
			surface water line ~8.5 km west of the Premises					sensitive receptors. This may be reassessed for operations when the licence application is received.
Operation								
Pipeline failure	Contaminated groundwater	Seepage to groundwater contaminating groundwater and affecting the health of surrounding receptors	RIWI Act 1914 Canning-Kimberley Groundwater Area	Refer to Section 3.1	C = Minor L = Rare Low Risk	N/A	N/A – will be assessed when Licence Application is received	N/A
Treated effluent quality exceedance			Groundwater ~ 10–12 mbgl					
Containment infrastructure failure	Contaminated ground water	Overland flow impacting surrounding receptors	Surrounding fauna. Nearest recorded sighting ~ 11 km south of the Premises					
	Contaminated storm water		Nearest surface water line ~8.5 km west of the Premises					
Operation of irrigation field	Contaminated	Seepage to groundwater contaminating	RIWI Act 1914 Canning-Kimberley		C = Minor L = Rare			

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Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
	<i>ground water</i>	<i>groundwater and affecting the health of surrounding receptors</i>	<i>Groundwater Area Groundwater ~ 10–12 mbgl</i>		<i>Low Risk</i>			

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website 18/09/2020	None received	N/A
Local Government Authority advised of proposal 22/09/2020	The Shire of East Pilbara responded on 07/10/2020 confirming that the proposal is consistent with the Shire of East Pilbara Town Planning Scheme No. 4. No planning approval is required or has been received.	N/A
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal 22/9/2020	DMIRS replied on 08/10/2020 stating that the Havieron project Stage 1 Mining proposal is currently being assessed and includes a camp located on the newly granted Mining Lease 45/1287. DMIRS provided a map indicating a full suite of infrastructure associated with the camp, not all are relevant to this assessment.	N/A
Internal Advice sought from North West Team 22/09/2020	<p>The proposed WWTP and irrigation field poses a low risk of impact to the water resources and surrounding environment. This is based on:</p> <ul style="list-style-type: none"> • Depth to groundwater table >10m; • Absence of water courses and limited flooding potential; • Absence of sensitive environmental receptors; • Distance to closest water user = Punmu aboriginal community ~35 km south east of the area. 	The DO considers the risk to water resources as low. Due to the advice received, the DO has determined that there is no requirement for ambient groundwater monitoring during time limited operations. This can be reassessed for the licence.
Applicant was provided with draft documents on 09/11/2020	<p>Applicant provided comments on 16/11/2020.</p> <p>Refer to Appendix 1</p>	Refer to Appendix 1

5. Conclusion

Based on the assessment in this Decision Report, the Delegated Officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. DWER, June 2019. *Guideline: Industry Regulation Guide to Licensing*. Department of Water and Environmental Regulation, Perth.
2. DER 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
3. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
4. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.

Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
Cover pages	<p>A change in tenure has occurred and the activity will no longer occur on E45/4701. E45/4701 has been converted to M45/1287 (which is already included on the Works Approval). It is suggested that E45/4701 be removed from the Works Approval.</p> <p>Requesting the premises name be amended to "Havieron Project" rather than "Havieron Exploration Project"</p>	Changes made as requested
Table 2	Minor administrative errors indicated, and size of infrastructure provided	Changes made as requested
Table 3	Requested 'Sprayfield' amended to 'Irrigation field'	Change made as requested
8b	<p>Condition 8b refers to an "<i>Environmental Commissioning Report for that item of infrastructure as required by condition 8 has been submitted by the works approval holder.</i>" It is noted that Environmental Commissioning (Condition 4 and 5) does not refer to an Environmental Commissioning Report and no further reference to an Environmental Commissioning Report is included in Condition 8. We request that one of the following occurs:</p> <ol style="list-style-type: none"> 1. Inclusion of an additional condition stipulating requirement for an Environmental Commissioning Report. 2. Requirement for commissioning be removed, given a commissioning period was not stipulated in Works Approval application. It is suggested that following submission of the Environmental Compliance Report, time limited operations can commence. However, it is noted a commissioning period will occur and a report will be available for submission to DWER 	Condition 7 amended to include the requirement of an Environmental Commissioning Report be submitted no later than 30 days after the end of the commissioning period.
Figure 2	Updated figure 2 provided	Figure 2 has been replaced with the updated figure as requested.
Decision Report Table 1	Table 1 included a High turbidity alarm as a Proposed Control for Contaminated Stormwater. Can this please be removed, as there will be no online turbidity monitoring on the WWTP as it is not required for DOH "low risk" effluent criteria.	Turbidity is not considered as essential a criteria for irrigation compared to discharges to water. Any issues associated with turbidity impacts to chlorination or other treatment are expected to be managed by the Licence Holder. High Turbidity alarm has been removed from the decision report.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)						
Application type						
Works approval	<input checked="" type="checkbox"/>					
Licence	<input type="checkbox"/>	Relevant works approval number:		None	<input type="checkbox"/>	
		Has the works approval been complied with?		Yes <input type="checkbox"/>	No <input type="checkbox"/>	
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes <input type="checkbox"/>	No <input type="checkbox"/>	
		Date Report received:				
Renewal	<input type="checkbox"/>	Current licence number:				
Amendment to works approval	<input type="checkbox"/>	Current works approval number:				
Amendment to licence	<input type="checkbox"/>	Current licence number:				
		Relevant works approval number:		N/A	<input type="checkbox"/>	
Registration	<input type="checkbox"/>	Current works approval number:		None	<input type="checkbox"/>	
Date application received		12/08/2020				
Applicant and Premises details						
Applicant name/s (full legal name/s)		Newcrest Operations Limited (ACN: 009 221 505)				
Premises name		Havieron Project				
Premises location		E 45/4701; M 45/1287 Town: East Pilbara, WA (Great Sandy Desert) Nearest Crossroad: Rippon Hills Road to Punmu				
Local Government Authority		Shire of East Pilbara				
Application documents						
HPCM file reference number:		DER2020/000368				
Key application documents (additional to application form):		58994 DWER WAA Report (Rev 0).pdf				
Scope of application/assessment						

<p>Summary of proposed activities or changes to existing operations.</p>	<p>Construction of a Category 85 sewage facility with a maximum production capacity of 75 cubic meters a day and an actual production of 75 cubic meters a day.</p> <p>The sewage facility is to service a new mine camp supporting the Havieron Exploration Activity. The camp will have a maximum capacity of 220 people. Effluent from the camp will be directed to the WWTP where following treatment the effluent will be discharged to a 4ha irrigation field.</p> <p>WWTP will comprise of three stages:</p> <ol style="list-style-type: none"> 1. Sewage pump station 2. Sequencing Batch Reactor (SBR) treatment plant 3. Irrigation field. <p>Clearing required:</p> <p>Irrigation field – 4ha’</p> <p>Exploration camp – 3.3 ha;</p> <p>Access road – 1.74ha.</p>	
<p>Category number/s (activities that cause the premises to become prescribed premises)</p>		
<p>Table 1: Prescribed premises categories</p>		
<p>Prescribed premises category and description</p>	<p>Proposed production or design capacity</p>	
<p>Category 85: Sewage facility: premises –</p>	<p>75 cubic meters per day</p>	
<p>(a) On which sewage is treated (excluding septic tanks); or</p>		
<p>(b) From which treated sewage is discharged onto land or into waters</p>		
<p>Legislative context and other approvals</p>		
<p>Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Referral decision No:</p> <p>Managed under Part V <input type="checkbox"/></p> <p>Assessed under Part IV <input type="checkbox"/></p>
<p>Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Ministerial statement No:</p> <p>EPA Report No:</p>
<p>Has the proposal been referred and/or assessed under the EPBC Act?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Reference No:</p>
<p>Has the applicant demonstrated occupancy (proof of occupier status)?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Certificate of title <input type="checkbox"/></p> <p>General lease <input type="checkbox"/> Expiry:</p> <p>Mining lease / tenement <input checked="" type="checkbox"/> Expiry:</p> <p>Other evidence <input type="checkbox"/> Expiry:</p>

Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Approval: Expiry date: If N/A explain why? Not necessary as Project development occurs under <i>Mining Act 1978</i>
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: Licence/permit No: permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Name: Canning-kimberly groundwater area Type: RIWI Canning-kimberly groundwater area Has Regulatory Services (Water) been consulted? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Regional office: North West
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25) Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004</i> , <i>Environmental Protection (Controlled Waste) Regulations 2004</i> , <i>State Agreement Act xxxx</i>)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Classification: Date of classification:</p>
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